

# Public Health Reports

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## IN THIS ISSUE

Mental Hygiene in Public Health

Some Organic Materials as Tick Repellents

Vertebral Body Trephine: Preliminary Report

Addendum: Plague in Fleas or Ground Squirrels

Incidence of Communicable Diseases in the U. S.



## CONTENTS

	Page
Mental hygiene in public health. Paul V. Lemkau.....	1151
Preliminary report on some organic materials as tick repellents and toxic agents. James M. Brennan.....	1162
Vertebral body trephine (Preliminary Report). A. A. Michele and F. J. Krueger.....	1166
Addendum: Plague—the survival of the infection in fleas or hibernating ground squirrels. F. M. Prince and N. E. Wayson.....	1167
Incidence of communicable diseases in the United States, June 15–July 12, 1947.....	1168
Deaths during week ended July 12, 1947.....	1172

### INCIDENCE OF DISEASE

United States:	
Reports from States for week ended July 19, 1947, and comparison with former years.....	1173
Weekly reports from cities:	
City reports for week ended July 12, 1947.....	1177
Rates, by geographic divisions, for a group of selected cities....	1179
Plague infection in Modoc and Placer Counties, Calif.....	1179
Territories and possessions:	
Puerto Rico—Notifiable diseases—4 weeks ended June 28, 1947..	1180
Foreign reports:	
Canada—Provinces—Communicable diseases—Week ended June 28, 1947.....	1181
Reports of cholera, plague, smallpox, typhus fever, and yellow fever received during the current week—	
Plague.....	1181
Smallpox.....	1182

# Public Health Reports

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## MENTAL HYGIENE IN PUBLIC HEALTH<sup>1</sup>

By PAUL V. LEMKAU, M. D., *Associate Professor of Public Health Administration, School of Hygiene and Public Health, The Johns Hopkins University; Consultant on Training to the Surgeon General, National Advisory Mental Health Council, United States Public Health Service*

The idea that there is any relationship between public health practice and mental hygiene is relatively new and is not even yet accepted in all quarters. For this reason it is of interest to trace the paths by which these two branches of science have progressed toward a common ground.

Public health concerned itself first with environmental sanitation, and then with communicable disease control, the development of diagnostic laboratories, and the distribution of biologics and drugs used for the control of infectious diseases. Only since many of the epidemic, communicable diseases have come under reasonable control has public health turned seriously to maternal, infant, and child hygiene, and even more recently to the prevention of the non-infectious diseases. The change is so recent that there is still no good name for the latter group; they are known as "degenerative diseases," "systemic diseases," "chronic diseases," even as "diseases of old age." In this group of diseases, evaluation of results necessarily shifts from the counting of deaths to the counting of days sick. Many of you are now at work codifying the causes of morbidity for international use, so that we may have a common basis for evaluating morbidity rather than giving attention only to causes of mortality. This change in emphasis is, of course, no isolated phenomenon; sociological problems arising from urbanization and aging of the population have brought pressures to bear that originally were not directly related to the concept of public health.

<sup>1</sup> Address delivered before an informal group of delegates to the International Health Organization, Dr. Hilding Berglund of Sweden, chairman. July 1, 1946, New York, N. Y.

The broadening of the scope of public health to include noninfectious diseases, diseases productive of morbidity rather than of mortality, has brought into public health a greater concern for the individual person as opposed to the group. In general, one can immunize against smallpox with very little regard for the individual. In contrast to this, it is very nearly impossible to treat a group of heart cases, for example, with the same disregard for the person. The problem becomes one of individual, not group, attack, even though many individuals are to be treated.

When public health became concerned with noninfectious diseases, mental diseases immediately occupied a high place on the agenda. The well known figures on the size of the problem of institutionalized mental disease need not be repeated here. All agree that the burden of morbidity is tremendous in loss of social productiveness and money. Less well known is the fact that a great deal of morbidity not requiring hospitalization in a psychiatric institution is also attributable to psychiatric causes. Studies of industrial absenteeism, accident reports, as Dr. Flanders Dunbar has so capably pointed out, and sick leave studies show this clearly. General practitioners know it and tell us about it over and over again. If public health is to concern itself with the causes of morbidity, it cannot overlook the problem of mental disease.

Mental hygiene began only when the medical specialty of psychiatry had advanced far enough to make its appearance possible. Psychiatry is devoted to the restoration of the individual patient to health; in fact, it has too often been merely the custodian of the many sick people who can never be restored to health.

In the United States, psychiatric hospitals are not, in general, administered by health departments but by entirely separate divisions of our State governments. Private hospitals and the institutions supported by the Federal Government treat only a small proportion of the total case load. Public health in the United States has only recently begun to face the problems of medical care with which the services in other nations have wrestled for generations; psychiatric treatment in hospitals is a problem of medical care far too great for our public health departments to covet.

The tremendous load of mental cases that need continued care, 50 to 60 percent of all admissions, has occupied most of psychiatry's attention. Feeding and housing were for years, and to a large extent still are, such pressing needs that little energy is left to consider how to lower the load by better treatment and by preventive measures. One cannot condemn psychiatric hospitals for their failures, great as these are and luridly as they are painted in the press. Most of their failures are directly due to inadequate financial resources. There is



no doubt that the length of stay in psychiatric hospitals can be lessened with the therapeutic knowledge now available, but this knowledge cannot be used unless our hospitals are adequately supported. Greater development of psychiatric techniques is needed; much research is clamoring to be done. But there is little doubt that if we were able to use fully the knowledge we now have, our fund of knowledge would grow and grow rapidly. Conversely, our inability to use the best methods now available because of inadequate funds—resulting in inadequate personnel, inadequate housing, and even inadequate food—is a serious threat to that knowledge which has been gained. As an evidence of this, consider the sudden disappearance of the insulin shock method of treatment from our public hospitals since the introduction of the more economical electric shock method. Research in insulin therapy, far from complete, has almost ceased; the reason has been economic far more than psychiatric. The hospitals can hardly be blamed; in the United States we spend considerably less per capita on our mentally diseased patients than we do in caring for prisoners.

Human beings are much the same the world over; this plea for adequate support for public mental hospitals probably applies to most of the countries of the world.

Support for public projects depends upon the interest of the people; this is true regardless of the nature of the government in power. The German people could have stopped the ruthless program of sterilizing and killing of the mentally ill in their country if they had chosen to. Our people can insure the best treatment for their mentally ill if they know the need and are willing to make the sacrifice. Teaching them the need can be done by the horror stories of the press, but it can also be done by the more affirmative method of pointing out that we are not using the best medical practice known because there is no money with which to do it. We can disabuse the public of that smug attitude that the mentally ill are happier than the normal; the mentally ill as a group are probably the most wretchedly unhappy of all that exist on this globe where terror, hunger, and homelessness have become commonplace. Things can be done to relieve them. Public interest and support are necessary to see to it that these things are done.

Unlike the problem of the prevention of mental disease which still requires considerable experimentation to find applicable techniques, the problem of treating mental disease is to get what we know to be good practice actually functioning. There is no doubt that morbidity due to hospitalized mental disease would fall if good practice were financially feasible.

It must be admitted that psychiatry had to be pushed to produce mental hygiene. Psychiatry may have been the mother, but the

aggressive partner in the relationship that engendered this child certainly came from outside psychiatry. After the American civil war, the neuropathologists pushed psychiatry. The experience with "shell shock" and related disorders in the first World War made advances mandatory. The depression of the '30's demanded that social work consider mental hygiene factors in administering relief. The recent war has pushed the profession to make remarkable progress, and our postwar needs appear to be driving us still further. The direction of progress that concerns us is not primarily the cure of the institutionalized mentally ill. It is rather the prevention of mental illness and the improvement of mental health in the population at large.

First, let us examine the problem of the prevention of mental illness. It is frequently said that since the etiology of mental disease is unknown, a preventive program is impossible. This statement involves, among other difficulties, the illogical premise that the term mental illness indicates a single category; actually "mental disease" covers a great many different illnesses. The single common factor is that the patient or society will not tolerate the condition unless treatment is under way. Some mental illness is as directly preventable as smallpox. Paresis, which makes up 5 to 10 percent of mental hospital admissions, is directly preventable. Post-traumatic psychoses are directly preventable. Post-encephalitic parkinsonism is not preventable, but the failure can be charged against immunologists as much as against mental hygienists. Personality deviations in people crippled by poliomyelitis are preventable by preventing polio; the same is true of crippling and mental defect following the meningitides. To say that the etiology of mental illness is unknown in the face of this large group of conditions of which the etiology is very exactly known is grossly illogical.

On the other hand, the so-called psychogenic mental diseases have not been proved to be preventable. They, the schizophrenic and manic-depressive psychoses and the neurotic syndromes, are the largest problem in terms of the number of cases and the production of morbidity. But we are not at a complete loss in dealing with them, nor are we unprepared so far as techniques for tackling the problem are concerned, though much experimentation needs to be done. Experiments will have to extend over generations. We probably do not yet have enough necessary knowledge to set up the critical experiments. This is, however, no excuse for refusing to face the problem.

Public health and mental hygiene now arrive at their common ground. Public health faces the problem of controlling morbidity. Mental hygiene faces the problem of caring for and preventing that

group of diseases which produces a very large share of morbidity. The two cannot avoid one another if they would; this gathering indicates very strongly that they choose to face the problem together—so closely together that a few people like myself, psychiatrist-public health men or public health-psychiatrists, or mental hygienists, have been produced to keep the association stable. Psychiatry and public health are turning to the problem in their educational programs. Psychiatry, formerly taught almost exclusively behind the locked doors of mental institutions, is including in its teaching programs out-patient work, child psychiatry, psychiatry in social work, psychiatry in industry, and military psychiatry. The majority of schools of public health in the United States pay some attention to the field of psychiatry, though, in my estimation, far too little in both teaching and research.

In order to approach the main thesis of this talk, the ways and means of a public health attack on mental disease, it is necessary to review briefly certain concepts of what might be called the structure of the personality. Psychiatrists are not in full agreement on many points, but most of the material to be presented can, I believe, be generally accepted as a foundation on which to work.

The human personality is built upon a base or core of constitutional endowment which is largely genetically determined. That this base or core can be influenced environmentally, however, is shown by the Australian reports on the effect of rubella on the child if the mother is attacked in early pregnancy. Upon this core, which is itself very difficult to define exactly, the personality structure is built, the building stones being life experience. The structure is never finished; it begins with the first cleavage of the fertilized ovum and ends only when the last gasp has died away. By life experience is meant not only mere thoughts and feelings, but accidents and diseases as well. As life experience must be included such diverse items as mother love and syphilis, temper tantrums, and the traumatic amputation of an extremity on the battlefield.

The degree of health of the personality depends on the solidity of the constitutional core plus the way the life experiences are built into the structure. An example may clarify the point. About the age of two there is a decided change in the rate of a child's growth; this is a function of that part of the constitutional core which determines the rate of growth of the human animal. The flattening of the growth curve is reflected in a lessened need for food which is soon apparent as lack of appetite. If life were quite uncomplicated, this might be an end to the problem; the child would eat what it wanted and needed. But life isn't uncomplicated. Mother is pleased when the child eats, displeased when he doesn't. The problem takes on

an emotional load quite distinct already from that constitutional change in rate of growth. If the mother learns that the child doesn't need the food, she may quickly stop forcing it, the mother-child relationship remains firm, and the experience becomes a sound building block in the personality structure. Suppose, however, that the mother is not informed, that she has such pride in her food that she won't see it disregarded as something unwanted, or that she has a deep-seated dislike for the child and grasps this chance to force an issue in which she can flaunt her power over it. In such a situation the personality structure of the child may be weakened. The weakening may appear in many different forms. It might appear as a condition of the gastrointestinal tract leading later to ulcer formation. It might appear as the pattern of vomiting which we saw in so many soldiers as they faced battle. It might appear as that peculiar form of emotional isolation we call schizophrenia. We cannot predict what the reaction of a weakened personality structure will be, but we strongly suspect that the possibilities include the so-called "psychogenic" diseases, schizophrenia, depressive psychoses, and the neuroses. It is hardly necessary to point out that the problem has been enormously simplified for presentation here. Please recognize that I have, for the sake of brevity, presented only a bare, slender skeleton whereas actually it is a tremendous body with a soft, flabby, but very thick layer of opaque ignorance which has only here and there been penetrated by incisive knowledge and hypothesis. There is however, a good, functional muscle layer of workable technique about the skeleton.

Suppose it turns out that there is no relation between personality structure and mental disease. Suppose this hypothesis—that life experience improperly built into personality structure may cause psychogenic mental illness—is finally proved untenable. Is there then any place for mental hygiene as we know it now? There is. Mental health is difficult to define, but it certainly is not chronic unhappiness and does not include bitterness between parent and child, hatreds within the home, and the physiological discomforts and organic lesions due to very severe and prolonged unvented emotion.

That these states can be relieved and people put at ease instead of dis-ease in a large percentage of cases can be proved. This means better mental health for the community. If you wish to construct a program for mental health and want to present scientific proof that it will be of value, do not look only to the prevention of the psychogenic mental diseases; look rather to the improvement of mental health. Every human contact can furnish proof of this. If you need figures, look to the results of out-patient psychiatric and child guidance clinics; almost all report a high percentage of improvement in human



happiness and adjustment. Their improvement rates are better than those for heart conditions, for instance, and, while carefully controlled experiments are rare indeed, the mental hygiene data are not in this respect behind those of heart disease, cancer, and other diseases producing high morbidity.

To recapitulate, mental hygiene and public health meet on the common ground of the control of diseases producing high morbidity. A fair segment of mental disease is directly preventable by attack on its etiology. As to the remainder, it may be preventable if life experience can be accumulated in such a way that the personality structure is firm and strong. In any case, the mental health of the community can be improved by the use of the techniques of mental hygiene. It remains, then, to see what these techniques are and how they can be applied to a population so that the result is improved mental health—hopefully, we may add, the prevention of a larger proportion of mental ill health than has been possible heretofore.

The primary principle in mental hygiene work is that a person is helped by talking over his problems with a respectful, relatively objective and non-judging second person. Those words "a person is helped" again present a problem of definition. Let us grant for the moment that the measurement of human productiveness is a means of judging whether or not a person has been "helped." In the Hawthorne plant of the Western Electric Co., an experiment in industrial hygiene was designed to show the effect of changing working conditions on the productiveness of workers. Rest periods, lunches, lighting—all were varied and compared with a control group. The result of this work is widely known; a factor of competition came into play and proved to be a great deal more important than any change of working conditions. Further study showed that some individuals showed wide swings in productiveness, sometimes making high records and again hitting slumps of low output. Investigation showed that the mental ease of the worker was the determining factor in many instances. When things were running on an emotionally even keel, output was good; when there was a fight or sickness or other strain at home, output was poor. It was found that talking a problem over with a counsellor resulted in an increase in productivity, even if no other action were taken to relieve the tense situation. Furthermore, and this is important to public health, it was found that the increased productiveness offset the cost of the personnel hired to do the counselling. What this means is simply that talking the situation over with a relatively objective, respectful second person brought increased mental health, as shown by increased production.

Almost all industries which, under the duress of the war, introduced counselling systems for their employees found them of value; the

techniques appear to work even in the hands of relatively badly trained and not too well selected counsellors.

The war has produced evidence, too, that talking with people helps. There is, so far as I am aware, no measurement of the effect of army discussion groups on morale and its converse, the neuroses of battle. There is, however, an experiment which shows that troop efficiency can be improved by a few lectures to fresh troops. R. Robert Cohen, in a rather well-controlled experiment, showed that four lectures and discussions about the common emotional problems arising upon entering military service—resentment of authority, homesickness, depression, etc.—produced improved training scores, lowered sick-call rates, and fewer absences without leave.

I have used as evidence only what are considered to be rather well-controlled demonstrations. There is an endless wealth of opinion which, frankly, cannot be used as scientific evidence. It is obvious that there is a tremendous amount of research work to be done.

It can be shown, then, that what has been called the primary principle in mental hygiene—that it improves mental health to talk things over with a second party who is respectful and objective—is one that works. I need not point out that the better trained that second party is, the better the result will be. On the other hand, the second party doesn't have to be a superbly trained psychiatrist. If such personnel were the only ones able to do mental hygiene work, we should have to admit defeat. It would be very fine to have available that almost universally successful mental hygiene tool, the three-man team of psychiatrist, psychiatric social worker, and psychologist, but we can't have such teams if we are to serve any large segment of the population. They will be needed, and in greatly increased numbers, to deal with actual pathological developments, serious cases, and as an educational force, just as the consultant in tuberculosis or other communicable disease is needed. But the front-line work needed to reach all the public served by the health department will have to be done by more numerous and less expensive personnel than psychiatric clinic teams.

The people who will have to do the front-line work are the health officers and the public health nurse. I know the nurse is already very heavily loaded and that there are not enough of them for programs already under way. I know how difficult it is to squeeze in 20 or 30 cases in half a day in a child health station, well-baby clinic or whatever you choose to call the clinics of the Maternal and Child Health Bureau. I know that obstetricians working at top speed in prenatal clinics have a great deal of resistance to talking over with a mother the emotional reactions of herself, her husband, the other children, and a couple of couples of grandparents toward an additional member of



the family. Too often the syphilologist can't look forward to attempting to influence his patient any further than getting him or her to take his or her shots or the hated spinal puncture. Still, it is at this level that much of the work must be done, and these are the people who must do it if we are to reach the public with preventive measures. It is at these times, when life experiences can be influenced as they enter the personality structure, that an effort may make the difference between a strong structure and one with a weak spot.

No one knows how this end shall be achieved. It is a problem for imaginative experimentation. In Baltimore, we feel that the education of the nurse and physician in the well-baby clinics, on which we concentrate our attention, can best be carried out by demonstrations of well-worked-up cases. The nurse can draw patterns from these which she can then apply in other cases. The education of our nurses in mental hygiene is largely in the hands of nonmedical—but very carefully selected and trained—personnel. The pediatricians in these clinics are approached, also on a case basis, by the physician in charge of the mental hygiene work. In the New Jersey Bureau of Child Hygiene, a college course in child development and habit patterns is the basic method for education of the nurses. In New York City, combined conferences of nurses and physicians are used for teaching. In Oregon, the attack has been quite different; a traveling consultant sets out to educate local practitioners in the treatment and management of patients with mental disease in the hope that this will have a preventive aspect in the long run. States in which out-patient clinical services to sick people are very poorly developed usually attack the problem of prevention through the medium of early treatment of the already pathological case, hoping eventually to spread the work into a prophylactic program for the public generally.

Group methods of dealing with psychiatric problems have developed tremendously during the war; so much so that many believe the technique originated in the psychiatric field. It is a mental hygiene technique, but it was originated as a means of dealing with systemic disease. Better results in the treatment of diabetics could be achieved if groups were instructed rather than if each patient were taught separately. Dr. Walter Bauer, in Boston, formed a club to keep his arthritic patients interested in coming to the clinic and to make use of the technique of group psychotherapy as it applies in that disease. So far as I am aware, this technique has been rarely used in public health work; it offers excellent opportunities for experimentation. It has been used successfully by the Child Study Association as a means of educating mothers in child development and habit training. Nursery schools have used groups for the same purpose.

In public schools in this country, mental hygiene has not been, for the most part, integrated in the health programs. Those programs which exist have been largely separate clinical services dealing with cases already giving trouble rather than with the mass of pupils. In Delaware, however, there is an experiment going on which is designed to reach all of the pupils in the schools. Classes in "human relations" are a part of the school curriculum. These classes begin with the presentation of an emotionally charged situation. It may be an excerpt from a movie, or an episode from a novel. The pupils are encouraged to discuss this situation and to offer solutions for it from their own experience. The results of this work are hard to evaluate, though it appears that the truancy rate was lowered in one such class. From this it may be inferred that school adjustment was improved.

These various techniques have been presented to show that basic methods for public health work in mental hygiene are available now. Many more such experiments are necessary. They need not be big experiments nor tremendously expensive ones. There is reason to be confident that a small start will grow because it proves itself to be valuable to the public; if it falters and dies by the wayside, it may be because it deserved to fail. To know this is the reason for experimentation.

Do not hesitate because the whole problem cannot be attacked at once. If industry offers an opening, grasp it. If your school health service invites mental hygiene work, try to fill that need. If group discussion of emotional problems in the prenatal clinic presents itself as a means of attack, try it out. If you can think of any way of influencing your venereal disease patients, or can see the direction toward which you want to influence them, try it. If the child health station needs mental hygiene help, try to give it that help. Personnel will be hard to find, but mental hygiene has an appeal for psychiatrists, and there are some who will rise to your bait if a good experiment is devised.

Who shall devise and carry out the experiments and who shall pay for them? The responsibility falls at various levels. In this country, the United States Public Health Service has for some years been very active in the leadership of the field, fostering the education of qualified psychiatrists in public health so that men would be available for direction and planning. The Service has also stimulated State health departments to get programs under way and has offered some financial support to programs. Congress has passed bills which will make possible the more rapid extension of this work. The States as they see the need and the means of beginning to fill it, are turning their attention to the possibilities of broad programs for the

propagation of mental health. City and county health departments in many areas are investigating the possibilities in the field, and some are starting to work, though on a very small scale.

The leadership of the schools of public health in the United States in this field leaves something to be desired. I wonder if it is generally realized that the schools of public health in the United States actually spend less than \$50,000 a year for mental hygiene teaching and research; that only one school in our country has a full-time research and teaching staff in mental hygiene. So far as I can discover, other countries have also failed to incorporate mental hygiene as an active program in their schools of public health.

The medical schools are also deficient in teaching mental hygiene, even in teaching psychiatry for that matter. Few enough have courses in general preventive medicine; very few indeed sponsor research in the prevention of mental disease and the promulgation of improved mental health. We are in a period of transition, and there are steps forward to be taken both in medical and in public health education. Criticism from psychiatrists and mental hygienists on this score must be made very humbly, for we have not done our full part in producing methods. In 1913, William H. Welch and Wickliffe Rose wrote a prospectus for the proposed School of Hygiene and Public Health for the Johns Hopkins University. In it, they included mental hygiene as one of the fields about which the well-educated public health officer should be informed. When the school was founded, attempts were made to implement this idea, but there was no satisfactory foundation on which to build a plan of action. It was not until 1934 that a program of research could be formulated that was scientifically sound enough to be included in the work of the school. The difficulty was not, in this case, any unwillingness of public health to take up mental hygiene. The problem was one of psychiatry not being able to offer an acceptable strategy for attack. It is my belief that methods and techniques are now available that make possible a broader advance in the field. The time is ripe for further experiments.

A final word. Whenever possible, design your experiment with an adequate control and make your measures as exact and objective as possible. If, for example, you tackle the venereal disease problem with a mental hygiene program designed to lessen promiscuity, your results might be measured in terms of reinfections and treatments completed in a treated as compared with a control group. In this approach, the inescapable assumption is made that the social ideal of completed treatment and lowered rate of reinfection represents a phase of mental health. Conceivably, if numbers were large enough, you might measure the effectiveness of a mental hygiene effort in a

prenatal clinic by the number of postpartum psychoses. A more immediate measure would be clinic attendance; perhaps there might even be a difference in the number of pre-eclamptic cases. A better indicator still, if it could be made mensurable, would be the quality of the mother-child relationship in the experimental and control groups, or the number and quality of behavior problems appearing in the child as it grows up. If you choose to try mental hygiene in your tuberculosis work, measure clinic attendance, relapse rate, acceptance of hospitalization. Do your best to set up controlled experiments with exact measures. This experimental attitude may well be one of the greatest contributions public health can make to mental hygiene in their alliance against morbidity-producing disease.

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### PRELIMINARY REPORT ON SOME ORGANIC MATERIALS AS TICK REPELLENTS AND TOXIC AGENTS<sup>1</sup>

By JAMES M. BRENNAN, *Entomologist, United States Public Health Service*

During the war years, several thousand compounds, mixtures, and synthetics were tested for their repellent and toxic qualities against mosquitoes, lice, mites, and other arthropods affecting the health of man. Little emphasis was placed on the prevention of tick bite, however, and aside from a report by Smith and Gouck (1946) and a brief note by Michener (1946) there is practically no available information on tick repellents.

During the past year some 80 organic materials have been appraised at the Rocky Mountain Laboratory in search of an effective agent for the protection of man from ticks. This paper briefly summarizes an evaluation of 15 of these materials, both for repellency and acaricidal properties. Details of experiments and complete test data will be presented in a subsequent report.

#### TESTS AS REPELLENTS

The criterion for evaluating repellency was the number of ticks observed on untreated socks as compared with treated ones. The latter were impregnated at the rate of two milliliters (liquid) or grams (solid) per square foot. Socks were worn by subjects exposed for 15 minutes to several thousand ticks under simulated natural conditions. Adults and nymphs of the lone star tick (*Amblyomma americanum*) and adults of the Rocky Mountain wood tick (*Dermacentor andersoni*) were used in these tests. In order to determine the persistence of effectiveness following treatment of the socks, observations were made

<sup>1</sup> From the Rocky Mountain Laboratory (Hamilton, Mont.) of the Division of Infectious Diseases, National Institute of Health.

over a period of 4 weeks, but no tests were made during the third week following treatment.

The materials reported on are:

Dibenzyl

2-Phenyl cyclohexanol (Tech.)

6-2-2 Mixture (60% Dimethyl phthalate, 20% Indalone, 20% Rutgers 612)

p-n-Propoxybenzaldehyde

Phthalic acid, hexahydro, diethyl ester

iso-Propyl cinnamate

N-Ethylacetanilide

Dibutyl phthalate

Dimethyl phthalate

1-Benzyl cyclohexanol-1

2-Propyl-5-methyl-5-nitro-m-dioxane

Benzyl benzoate

N-n-Butylacetanilide

N-n-Propylacetanilide

Ethyl cyclohexylcyanoacetate

All these materials gave some degree of protection, and generally were much more effective against *A. americanum* than against *D. andersoni*.

Little protection against *D. andersoni* was afforded by dibenzyl, benzyl benzoate, dimethyl phthalate, and 2-propyl-5-methyl-5-nitro-m-dioxane and somewhat more, but still insufficient protection by 6-2-2 mixture, ethylacetanilide and dibutyl phthalate. Butylacetanilide, ethyl cyclohexylcyanoacetate, phenyl cyclohexanol, benzyl cyclohexanol, and phthalic acid, hexahydro, diethyl ester gave upwards from 90 percent protection against *D. andersoni* through 2 weeks after treatment, but, with the exception of butylacetanilide, showed a considerable reduction in effectiveness after the fourth week. Ethyl cyclohexylcyanoacetate gave complete protection when freshly applied, as did butylacetanilide the second week after treatment.

All materials, except dibenzyl, iso-propyl cinnamate, and ethylacetanilide gave 95 to 100 percent protection against *A. americanum* adults throughout 4 weeks following treatment. These three, while having given more than 95 percent protection through 2 weeks following treatment, gave less than 90 percent protection after 4 weeks. Phenyl cyclohexanol, benzyl cyclohexanol, dimethyl phthalate, and propylacetanilide gave complete protection from *A. americanum* adults throughout the entire series of tests, while butylacetanilide, ethyl cyclohexylcyanoacetate, benzyl benzoate, dibutyl phthalate, 6-2-2, and propoxybenzaldehyde gave 99 to 100 percent protection.



Although none of the materials gave complete protection from *A. americanum* nymphs throughout the entire series of tests, the results are consistent with and quite similar to those recorded for the adults, and in general all materials gave a persistently high degree of protection.

*Effect of Rinsing.*—The effectiveness of the majority of the materials tested for repellency was completely lost or greatly reduced as a result of rinsing the treated socks in warm tap water. Dibutyl phthalate, phenyl cyclohexanol, benzyl benzoate, and butylacetanilide continued to give adequate protection from *A. americanum*, but not from *D. andersoni*.

#### TESTS AS ACARICIDES

These same materials have been tested for toxicity against larvae, nymphs, and adults of *D. andersoni* by confining them to squares of cloth impregnated at the rate of four milliliters (liquid) or grams (solid) per square foot, and observing the average time required for their immobilization.

None of the materials stopped adults within a 2-hour exposure period.

Phenyl cyclohexanol, propoxybenzaldehyde, and benzyl cyclohexanol stopped larvae in less than 15 minutes. Butylacetanilide, propylacetanilide, ethylacetanilide, iso-propyl cinnamate, and phthalic acid, hexahydro, diethyl ester stopped larvae in less than 30 minutes, but more than 15 minutes. Benzyl benzoate, 2-propyl-5-methyl-5-nitro-m-dioxane, dimethyl phthalate, and the 6-2-2 mixture stopped larvae in less than 60 minutes, but more than 30 minutes. Dibenzyl, dibutyl phthalate, and ethyl cyclohexylcyanoacetate failed to stop larvae within a 2-hour observation period.

Nymphs were immobilized by phenyl cyclohexanol in 34 minutes, by ethylacetanilide in 23 minutes, by propylacetanilide in 58 minutes, and by phthalic acid, hexahydro, diethyl ester in 2 hours. Butylacetanilide, 6-2-2, and benzyl cyclohexanol greatly enfeebled nymphs in less than 45 minutes, but did not stop them within 2 hours. Ethyl cyclohexylcyanoacetate, propoxybenzaldehyde, and iso-propyl cinnamate had little effect on nymphs, while dimethyl phthalate, dibenzyl, 2-propyl-5-methyl-5-nitro-m-dioxane, benzyl benzoate, and dibutyl phthalate appeared to be wholly ineffective.

#### SOME OBSERVATIONS ON THE PRACTICAL APPLICATION OF REPELLENTS

In the course of the routine collecting this spring of *D. andersoni* adults by seven members of the Laboratory personnel, it was possible to make limited tests with two compounds, 2-phenyl cyclohexanol and



dibutyl phthalate, under field conditions. White coveralls are regularly worn by persons so employed. Observations were irregular and only incomplete data were obtained because of frequent unfavorable weather conditions.

Some coveralls and socks were impregnated with 2 ounces of the materials; others were untreated. Repellency was evaluated as the percent reduction in the number of ticks on treated clothing, in the course of a day, below the number on untreated clothing.

Dibutyl phthalate was 87 percent effective 1 day after treatment, 78 percent effective on the fourth day, 87 percent effective on the tenth day, and 84 percent effective on the twelfth day. Phenyl cyclohexanol was 92 percent effective 1 day after treatment and 100 percent effective on the fourth day.

These results are consistent with those obtained from the repellent tests under simulated field conditions.

#### DISCUSSION

It is apparent from the results of all tests that none of the materials reported on can be entirely disregarded as an agent of some potential value for protecting man against ticks. None of them stains fabrics. The odors of iso-propyl cinnamate, propoxybenzaldehyde, ethylacetanilide, and propylacetanilide were objectionable to a majority of 20 persons. Tests by others, including the United States Food and Drug Administration, have demonstrated that phenyl cyclohexanol, benzyl benzoate, dibutyl phthalate, 6-2-2, propoxybenzaldehyde, ethylacetanilide, propylacetanilide, ethyl cyclohexylcyanoacetate, dimethyl phthalate, and 2-propyl-5-methyl-5-nitro-m-dioxane can be used safely from the standpoint of irritation to the skin. Data relative to the possible toxicity and irritation to man of the other compounds were not available to the writer.

Although the data are not extensive enough to be conclusive, a comparison of the results from all tests strongly suggests that phenyl cyclohexanol and butylacetanilide are very promising agents against *Dermacentor andersoni* and *Amblyomma americanum*.

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## VERTEBRAL BODY TREPHINE

### Preliminary Report

By A. A. MICHELE, *Surgeon (R), United States Public Health Service*, and F. J. KRUEGER, *Surgeon, United States Public Health Service*<sup>1</sup>

Diagnosis of early vertebral body lesions has been a perplexing problem with the bulk of evidence left for the roentegenologist and the clinical pathologist. Direct biopsy of the lesion offers rapid, early, conclusive and simple method of diagnosis.

Late lesions of the vertebral column have offered no problem as their pathognomonic characteristics are readily recognized. From a therapeutic standpoint of view it is imperative to know the nature of the early changes in the vertebral bodies. Needle biopsy has been a dangerous procedure and in most cases an unreliable and inadequate method. Abdominal or thoracic approach is not carried out without danger. In these cases diagnosis cannot be made by methods other than direct biopsy.

In the absence of a definite diagnosis, treatment of vertebral body lesions by antibiotics, X-ray, or spinal fusion has been empirical. With a simple adequate biopsy of the vertebral body, a true scientific approach is found. The medico-legal aspect is of immensurable value. With definite information, the entire scope and course of treatment is dependent on concrete evidence.

A preliminary report of the method used to pass a special trephine (fig. 1.) successfully into the vertebral body is presented here. The patient is placed in a prone position. A paravertebral incision is made directly over the articular facet of the vertebral body under diagnosis. The articular facet is located and the intra-articular space is gouged at a right angle, with the trephine entering into the medullary space of the pedicle. With slight pressure the trephine is guided by its own weight into the body of the vertebra. When the spine is in a neutral attitude, the trephine will enter the vertebral body at its midportion. If the spine is hyperflexed, the trephine will enter the inferior anterior portion of the body and if hyperextended will enter the superior anterior margin of the body. The dense cortical rim of the vertebral body and of the pedicle will prevent the trephine from penetrating outside its margin. The diameter of the trephine used is dependent upon the vertebra to be biopsied. A small  $\frac{1}{8}$ -inch trephine is used for the cervical region, and one of about  $\frac{1}{4}$ -inch for the lumbar area.

Aside from removal of the pathological tissue through the area of trephining, it is noted that a complete excochleation of the cancellous vertebral body can be performed with replacement by iliac graft.

<sup>1</sup> From Orthopedic Service, U. S. Marine Hospital, Stapleton, Staten Island, New York.

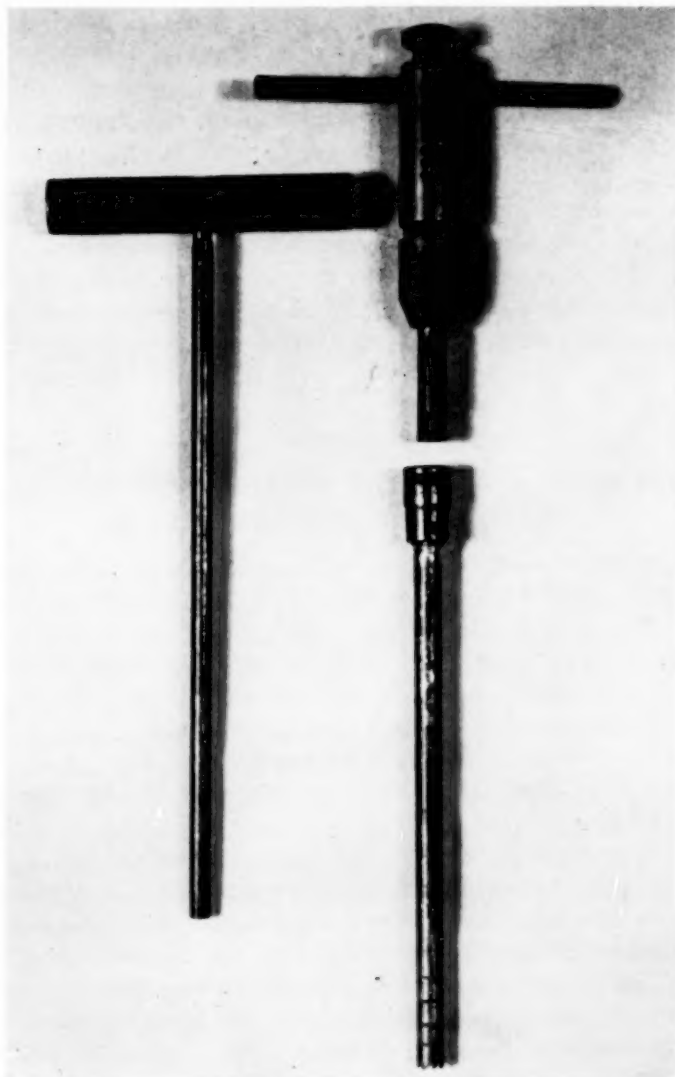
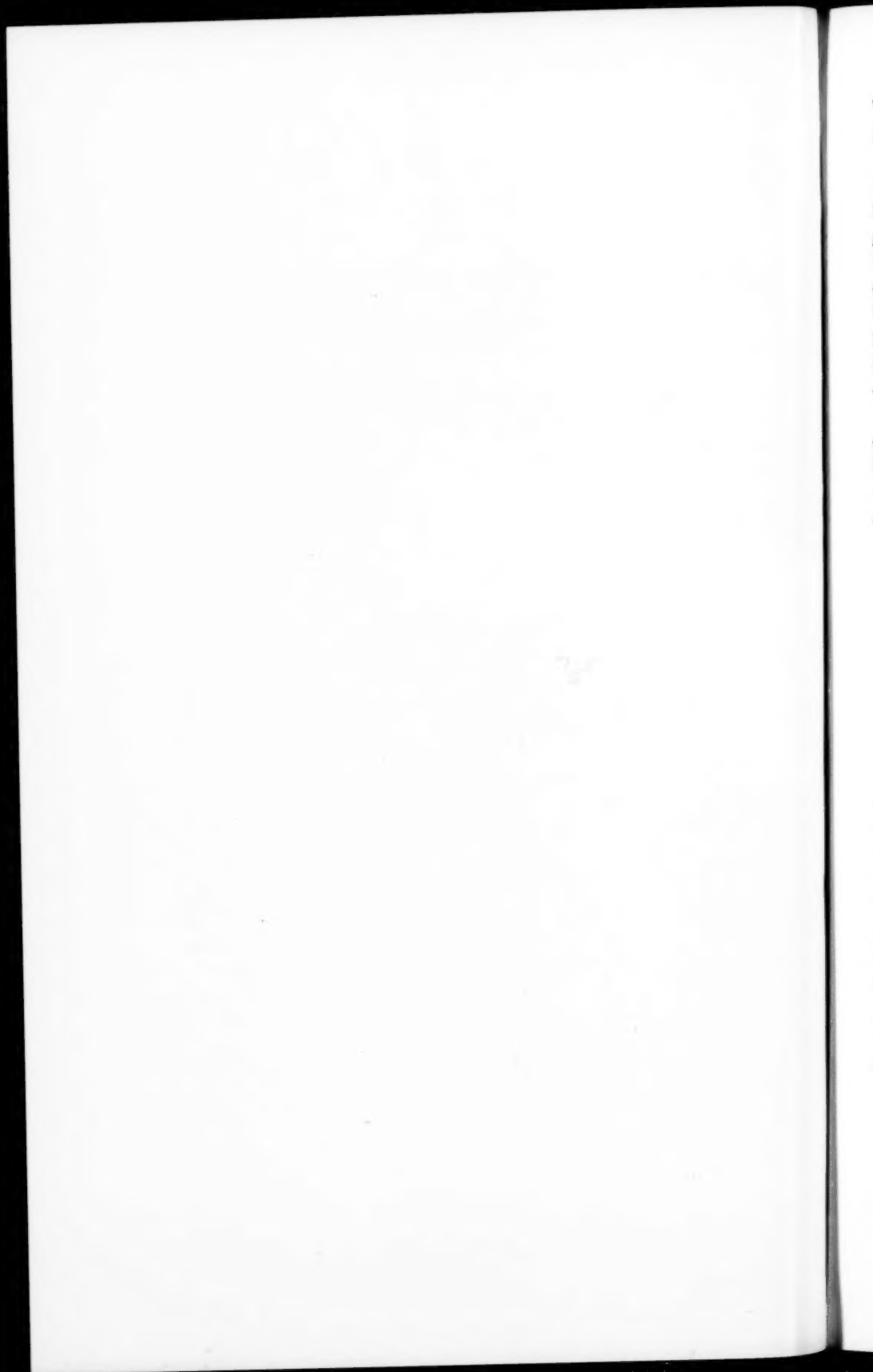


Figure 1.—Vertebral Body Trephine



The area of penetration through the articular facets is replaced by iliac graft in order to effect a fusion of the articulation.

The question of conservative or operative treatment for spinal tuberculosis with a beginning collapse, has thus been decided. Spinal fusion is modified by replacing pathological tissue with osteogenetic graft. In cases of hematomyelia involving the vertebral body where there has been no response to X-ray therapy, the vertebra can be excised and replaced with bone graft. In cases of vertebral body tuberculosis with abscess formation, suction of pus can be carried out through the area of biopsy without difficulty prior to the fusion. Kümmel's disease of the vertebral bodies following fracture can be arrested by replacement with bone graft.

Trephine of the vertebral body has for us readily established the diagnosis and changed the concept of treatment of vertebral body lesions. The diagnosis is a direct and accurate one. Collapse of the vertebral body can be prevented by the removal of pathological tissue and replacement with normal osteogenic iliac graft.

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#### Addendum to

### PLAGUE—THE SURVIVAL OF THE INFECTION IN FLEAS OR HIBERNATING GROUND SQUIRRELS

By F. M. PRINCE, *Associate Entomologist*, and N. E. WAYSON, *Medical Director, Plague Investigation Station, United States Public Health Service, San Francisco, California*

In March, 1946, an experiment was concluded in a study by the authors of the probability of the survival of plague through the winter in hibernating ground squirrels (*Citellus richardsonii*), and fleas (*Diamanus montanus*), (PUBLIC HEALTH REPORTS, Vol. 62, No. 13, p. 463-467, March 28, 1947). It was found that an infected flea survived on a hibernating squirrel, or in its nest through the winter, and contained the infection at the end of the hibernating period, but died within 3 days thereafter without feeding on a test animal. The squirrels which survived during the period remained well after awakening. This experiment has been repeated under similar circumstances, technique, controls and proofs with (*Citellus townsendii*) and the same species of fleas, during the past winter (October 1946-March 1947). The results obtained in the previous experiment have been confirmed and the following additional findings obtained:

1. Four squirrels survived 4 months in hibernation after intracutaneous inoculation with *P. pestis*.

One of these remained well for 6 days after awakening, sickened on the seventh day and died on the eighth with an acute inflammatory

reaction at the site of inoculation, and a bacteremia. Microscopic examinations, cultures and animal inoculations from its tissues proved infection with plague.

The remaining three squirrels continued to be well and appeared normal at necropsy when killed 15 days later.

Fifty normal fleas were placed on each of these squirrels at the time they were inoculated. At the end of the hibernation 42 of the 200 were recovered alive and none were infected.

2. Fifty infected fleas were placed on each of four hibernating squirrels and left with them for 4 months. At the end of this period 47 of the 200 were recovered alive.

Four of these contained the infection.

One of the four was placed on a white rat under conditions which eliminated all other sources of infection. The rat sickened twenty-one days later and died on the twenty-third day of plague with a primary bubo in the popliteal space of one leg, a secondary bubo in the homolateral sacral node, and a bacteremia.

Two of the remaining infected fleas died within 4 days after removing them from the squirrels and nests. These had failed to feed on a white mouse. The fourth flea fed on each of five white mice during its survival of 10 days, but did not transmit the infection.

These results indicate that a squirrel in whose skin plague is introduced while the animal is in hibernation in October may awaken 4 months later and subsequently develop acute manifestations of the local lesion and a lethal bacteremia. Also, that a flea infected in October can retain the infection and transmit it during the following March.

It has been previously suggested that both of these methods of the survival of plague over the winter occurred, but it is believed that the conjectures have not been proven heretofore under amply controlled experimental conditions simulating those in nature.

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#### INCIDENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES

June 15-July 12, 1947

The accompanying table summarizes the incidence of nine important communicable diseases, based on weekly telegraphic reports from State health departments. The reports from each State for each week are published in PUBLIC HEALTH REPORTS under the section "Incidence of Disease." The table gives the number of cases of these diseases for the 4 weeks ended July 12, 1947, the number reported for the corresponding period in 1946, and the median number for the years 1942-46.



## DISEASES ABOVE MEDIAN INCIDENCE

*Influenza.*—A very slight excess of reported cases of influenza was observed during the current 4-week period as compared with the median for the corresponding period of the 5 preceding years. It happens that the 1946 figure for the United States as a whole was the median figure for the years 1942–46, and the 1947 total was 3 percent higher than this. The excess was confined to the South Atlantic region. In this area reported cases were running about 60 percent above the median.

*Whooping cough.*—Comparison of current statistics of whooping cough with data for the preceding 5 years reveals that the incidence of this disease is running at a level 39 percent above the median level. During the preceding 4-week period, however, the excess was about 6 percent higher. This resulted from a slight drop in the number of cases reported in the 28-day period ending July 12 while median experience calls for no appreciable change in the interval. Whooping cough incidence during this season of the year is usually practically steady with slight upswings occasionally observed in July or early August. The excess that is now being seen has existed since the last part of 1946. During the current period it is especially marked in the East North Central and West South Central States, less marked in the New England, West North Central, South Atlantic, East South Central, and Mountain States, and nonexistent in the Middle Atlantic and Pacific States.

## DISEASES BELOW MEDIAN INCIDENCE

*Diphtheria.*—The incidence of reported cases of diphtheria continued to run below both last year's cases and the 5-year medians for corresponding periods. There was no large section of the country in which current incidence was significantly higher than that for 1946. The gradual rise which was observed and which received considerable comment in 1944 and 1945 seems to have terminated in the latter half of 1946. Nevertheless, it is important to add that there is as yet no sign of a continuation of the downward trend that lasted up until the beginning of the war.

*Measles.*—Cases of measles during the current 4-week period were lower than median norms in all sections of the country except the East and West North Central and East South Central areas, and even in these sections the excesses were relatively slight for measles, a disease in which wide fluctuations of incidence are the rule rather than the exception. For the country as a whole the number of cases was 22 percent below the median figure. During 1947 to date the total number of cases of measles has been exceptionally low. In the

19 years in which these data have been available on a comparable basis the cumulative incidence in the first 28 weeks of the year has been less only once—in 1945.

*Meningococcus meningitis.*—The total of 216 cases of meningococcus meningitis reported to State and city health departments during the 4-week period ending July 12 was less than half of the median of the 5 preceding years for the corresponding period. Those 5 years, however, include several years (1943–45) of high incidence during the war. But the current incidence was also lower than that recorded last year, not only for the country as a whole but also for every one of the major geographical subdivisions.

*Poliomyelitis.*—Only in the Pacific Coast States was the current incidence of reported cases of poliomyelitis running at a level above the 1942–46 median figures for the area. For the year to date there have been 1,434 cases reported for the country as a whole of which 502 have been in the Pacific region, 399 in California and the remainder in Washington and Oregon. How much of this apparent concentration in one region of the country is due to variation in the completeness of reporting it is difficult to say. Although the Pacific area was relatively lightly hit during the severe 1946 epidemic, the incidence in that part of the country has been continuously above median levels during 1947 while for the country as a whole the reported cases have been below the 1942–46 median since the first half of May. (NOTE.—This disease was erroneously included with those above median incidence in the PUBLIC HEALTH REPORTS for July 11, 1947, Vol. 62, No. 28.)

*Scarlet fever.*—The number of cases of scarlet fever reported during the current 4-week period was 31 percent below the median for the corresponding period in 1942–46. Every section of the country has been sharing in the low reported morbidity from this cause. For each 4-week period since the beginning of the year the totals for every one of the various geographic subdivisions have been below their respective medians.

*Smallpox.*—Only 5 cases of smallpox were reported in the country during the 4-week period ended July 12. This is in contrast to a median value of 20 cases for the period and also in contrast to a total of 43 that was recorded for the 4-week period ended April 19, 1947. (NOTE.—The report of a fatal case of smallpox in Newark, N. J., on April 17 that was mentioned in PUBLIC HEALTH REPORTS for May 16, 1947, p. 720, was an error. The case actually occurred in Camden, as stated in the PUBLIC HEALTH REPORTS for May 9, p. 694.)

*Typhoid and paratyphoid fever.*—The national totals of reported cases of these diseases have been less than median norms for the same intervals continuously since the beginning of the year. In the

current period the incidence was 30 percent below the comparable median and only the Pacific States reported higher-than-median morbidity (38 cases compared to a median of 18).<sup>1</sup>

### MORTALITY, ALL CAUSES

For the 4 weeks ended July 12 there were 34,008 deaths reported to the National Office of Vital Statistics by 93 large cities of the country. The median number for the corresponding period of the years 1444-46 was 33,839. Although the total number of deaths was slightly higher than the median, it is of interest to note that infant mortality for the year to date has been at an all-time record low.

*Number of reported cases of 9 communicable diseases in the United States during the 4-week period June 15-July 12, 1947, the number for the corresponding period in 1946, and the median number of cases reported for the corresponding period, 1942-46*

Division	Current period	1946	5-year median	Current period	1946	5-year median	Current period	1946	5-year median
	Diphtheria			Influenza <sup>1</sup>			Measles		
United States.....	563	845	623	2,229	2,171	2,171	17,946	39,747	23,046
New England.....	32	30	24	8	5	5	2,909	7,244	3,160
Middle Atlantic.....	108	133	75	21	21	21	4,121	12,332	4,581
East North Central.....	58	100	100	56	57	62	5,722	7,734	4,007
West North Central.....	59	85	62	7	15	26	1,881	1,102	1,102
South Atlantic.....	86	189	94	936	706	581	1,225	4,057	1,719
East South Central.....	42	68	56	55	83	70	341	707	238
West South Central.....	79	120	120	946	1,156	1,156	679	1,956	943
Mountain.....	27	47	42	160	88	194	531	1,172	1,071
Pacific.....	72	73	100	40	40	60	537	3,443	3,443
	Meningococcus meningitis			Poliomyelitis			Scarlet fever		
United States.....	216	311	502	372	1,214	868	3,156	4,602	4,602
New England.....	9	11	41	15	15	14	272	398	622
Middle Atlantic.....	47	76	98	41	67	67	845	1,578	1,237
East North Central.....	43	48	114	47	126	50	983	1,182	1,182
West North Central.....	23	31	34	44	186	29	269	263	321
South Atlantic.....	34	35	60	41	171	105	180	296	296
East South Central.....	18	31	48	8	107	87	87	101	120
West South Central.....	24	33	50	31	328	187	98	119	152
Mountain.....	2	7	10	22	100	50	135	222	222
Pacific.....	16	39	58	123	114	13	287	443	502
	Smallpox			Typhoid and paratyphoid fever			Whooping cough		
United States.....	5	20	20	350	470	501	14,204	7,995	10,251
New England.....	0	0	0	13	46	24	865	784	784
Middle Atlantic.....	0	1	0	31	40	40	2,442	1,316	2,614
East North Central.....	1	7	7	42	63	63	2,725	1,789	1,789
West North Central.....	3	2	6	12	35	24	773	387	648
South Atlantic.....	0	0	0	54	88	138	2,459	1,537	1,978
East South Central.....	0	3	3	38	43	74	590	311	528
West South Central.....	0	6	4	110	124	138	2,841	1,072	1,079
Mountain.....	1	1	1	12	15	21	539	344	490
Pacific.....	0	0	1	38	16	18	970	+55	991

<sup>1</sup> New York, North Carolina, and Pennsylvania excluded; New York City and Philadelphia included.

**DEATHS DURING WEEK ENDED JULY 12, 1947**

[From the Weekly Mortality Index, issued by the National Office of Vital Statistics]

	Week ended July 12, 1947	Correspond- ing week, 1946
<b>Data for 93 large cities of the United States:</b>		
Total deaths.....	8,915	8,770
Median for 3 prior years.....	8,770	
Total deaths, first 28 weeks of year.....	267,806	265,179
Deaths under 1 year of age.....	742	750
Median for 3 prior years.....	615	
Deaths under 1 year of age, first 28 weeks of year.....	21,372	17,445
<b>Data from industrial insurance companies:</b>		
Policies in force.....	67,243,158	67,232,016
Number of death claims.....	12,111	12,124
Death claims per 1,000 policies in force, annual rate.....	9.4	9.4
Death claims per 1,000 policies, first 28 weeks of year, annual rate.....	9.7	10.1

# INCIDENCE OF DISEASE

*No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring*

## UNITED STATES

### REPORTS FROM STATES FOR WEEK ENDED JULY 19, 1947

#### Summary

Only a moderate seasonal increase occurred in the incidence of poliomyelitis. A total of 157 cases was reported, as compared with 125 last week, 666 for the corresponding week last year, and a 5-year (1942-46) median of 369. The largest increase was reported in the East North Central area—from 18 cases last week to 31. The 9 States reporting more than 5 cases each currently are as follows (last week's figures in parentheses): Rhode Island 6 (0), New York 13 (8), Pennsylvania 12 (7), Ohio 13 (5), Illinois 11 (9), Tennessee 6 (0), Texas 9 (6), Idaho 10 (2), and California 24 (22).

Of the total of 964 cases reported since March 15 (the approximate average date of seasonal low incidence), as compared with 2,789 for the corresponding period last year and 1,653 for the 5-year median, 638 occurred in the 11 States reporting 20 or more cases during the period, as follows (last year's corresponding figures in parentheses): New York 74 (117), Pennsylvania 26 (30), Ohio 36 (58), Illinois 47 (136), Minnesota 22 (177), Missouri 23 (76), Nebraska 26 (38), Florida 28 (313), Texas 62 (424), Washington 20 (32), California 274 (212).

Current totals reported of diphtheria, influenza, measles, meningococcus meningitis, scarlet fever, and whooping cough declined during the week, and all except influenza and whooping cough are below the respective corresponding 5-year medians. Cumulative figures since the first of the year are above the respective corresponding 5-year medians for influenza, amebic and undefined dysentery, tularemia, and whooping cough. The total of undulant fever cases reported for the year to date is 3,298, as compared with 2,777 and 2,729, respectively, for the same periods of 1946 and 1945.

During the week, New York and Pennsylvania reported 1 case each of anthrax, and Arkansas and California 1 case each of leprosy. West Virginia reported 8 cases of glanders, and Wyoming 1 case of Colorado tick fever.

Deaths registered during the week in 93 large cities of the United States totaled 8,289, as compared with 8,915 last week, 8,087 and 7,698, respectively, for the corresponding weeks of 1946 and 1945, and a 3-year (1944-46) median of 7,783. The total for the year to date in these cities is 275,897, as compared with 273,266 for the corresponding period last year.

*Telegraphic morbidity reports from State health officers for the week ended July 19, 1947, and comparison with corresponding week of 1946 and 5-year median*

In these tables a zero indicates a definite report, while leaders imply that, although none was reported, cases may have occurred.

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended—		Median 1942-46	Week ended—		Median 1942-46	Week ended—		Median 1942-46	Week ended—		Median 1942-46
	July 19, 1947	July 20, 1946		July 19, 1947	July 20, 1946		July 19, 1947	July 20, 1946		July 19, 1947	July 20, 1946	
NEW ENGLAND												
Maine.....	0	2	0	—	—	—	11	28	26	0	0	0
New Hampshire.....	0	0	0	—	—	—	4	4	4	0	0	0
Vermont.....	0	0	0	—	—	—	39	62	57	0	0	0
Massachusetts.....	3	14	5	—	—	—	131	405	185	0	0	2
Rhode Island.....	0	1	0	—	—	—	15	20	20	0	0	2
Connecticut.....	0	1	0	—	—	—	105	122	69	1	3	3
MIDDLE ATLANTIC												
New York.....	12	14	7	13	14	12	307	589	184	5	12	13
New Jersey.....	2	5	2	2	3	3	176	275	122	3	3	3
Pennsylvania.....	4	1	5	(2)	12	(2)	61	223	111	4	1	4
EAST NORTH CENTRAL												
Ohio.....	6	1	2	3	—	3	198	340	73	1	2	2
Indiana.....	4	0	4	—	—	2	29	16	14	2	0	1
Illinois.....	1	2	3	1	2	4	141	86	86	3	6	5
Michigan.....	0	13	4	—	6	1	108	205	105	3	3	4
Wisconsin.....	1	4	3	—	9	9	321	300	280	0	0	1
WEST NORTH CENTRAL												
Minnesota.....	5	3	3	—	—	—	129	21	33	3	3	3
Iowa.....	5	4	1	1	—	—	49	29	29	2	1	1
Missouri.....	3	2	4	—	1	1	22	14	14	1	2	3
North Dakota.....	0	0	0	—	—	—	8	4	4	0	0	0
South Dakota.....	1	0	0	—	—	—	10	3	7	0	0	0
Nebraska.....	1	0	1	—	—	1	10	11	10	0	0	0
Kansas.....	6	4	2	2	1	1	6	11	22	0	0	0
SOUTH ATLANTIC												
Delaware.....	0	0	0	—	—	—	1	4	2	0	0	0
Maryland.....	2	3	0	6	3	2	8	158	15	2	2	4
District of Columbia.....	0	0	0	—	—	—	1	24	9	0	0	0
Virginia.....	1	15	7	72	65	39	75	122	30	2	0	7
West Virginia.....	0	2	3	8	—	—	8	9	9	0	1	0
North Carolina.....	2	1	4	—	—	—	14	35	35	3	3	4
South Carolina.....	1	7	7	148	73	87	35	34	16	0	0	1
Georgia.....	1	3	4	4	3	7	26	21	10	2	0	1
Florida.....	1	14	5	6	2	2	12	14	11	2	2	2
EAST SOUTH CENTRAL												
Kentucky.....	2	4	2	—	1	1	3	102	13	1	2	2
Tennessee.....	4	2	3	1	3	5	12	23	16	2	2	3
Alabama.....	1	4	3	28	7	12	17	24	12	3	1	4
Mississippi.....	7	1	3	2	—	—	5	—	—	0	1	1
WEST SOUTH CENTRAL												
Arkansas.....	3	1	3	2	2	4	11	10	11	1	2	2
Louisiana.....	1	17	10	1	5	5	1	13	8	1	7	3
Oklahoma.....	2	2	2	8	1	2	4	10	9	0	2	2
Texas.....	13	29	27	177	246	231	87	176	101	1	12	4
MOUNTAIN												
Montana.....	1	2	0	—	—	—	31	22	22	2	0	0
Idaho.....	0	1	0	2	4	2	4	5	5	0	1	0
Wyoming.....	0	0	0	—	—	—	—	10	9	0	0	0
Colorado.....	1	8	3	3	1	2	24	24	9	0	1	0
New Mexico.....	0	2	1	3	—	1	6	22	8	0	0	0
Arizona.....	0	13	1	2	8	16	7	40	12	0	0	0
Utah.....	1	0	0	—	—	—	5	50	50	0	0	0
Nevada.....	0	0	0	—	—	—	—	1	5	0	0	0
PACIFIC												
Washington.....	3	5	2	—	—	—	11	28	61	1	2	2
Oregon.....	0	3	3	1	—	5	12	59	39	0	0	1
California.....	12	33	17	6	4	3	61	246	352	2	12	12
Total.....	113	243	169	492	456	456	2,361	4,054	2,739	53	89	114
29 weeks.....	6,548	9,068	6,765	300,042	180,694	79,477	178,740	630,728	528,294	2,275	4,196	5,770
Seasonal low week.....	(27th) July 5-11			(30th) July 26-Aug. 1			(35th) Aug. 30-Sept. 5			(37th) Sept. 13-19		
Total since low.....	251	440	351	333,917	551,942	115,184	201,627	656,850	566,307	3,247	5,703	8,222

<sup>1</sup> New York City only.

<sup>2</sup> Philadelphia only.

<sup>3</sup> Period ended earlier than Saturday.

<sup>4</sup> Dates between which the approximate low week ends. The specific date will vary from year to year.



Telegraphic morbidity reports from State health officers for the week ended July 19, 1947, and comparison with corresponding week of 1946 and 5-year median—Con.

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
	Week ended—		Median 1942-46	Week ended—		Median 1942-46	Week ended—		Median 1942-46	Week ended—		Median 1942-46
	July 19, 1947	July 20, 1946		July 19, 1947	July 20, 1946		July 19, 1947	July 20, 1946		July 19, 1947 <sup>1</sup>	July 20, 1946	
NEW ENGLAND												
Maine	0	0	1	9	2	2	0	0	0	1	1	0
New Hampshire	0	12	3	1	0	0	0	0	0	0	0	0
Vermont	0	2	2	1	0	2	0	0	0	0	1	0
Massachusetts	1	1	3	24	30	62	0	0	0	4	2	2
Rhode Island	6	0	0	4	4	1	0	0	0	0	0	0
Connecticut	1	4	3	4	9	12	0	0	0	2	0	0
MIDDLE ATLANTIC												
New York	13	22	22	78	72	74	0	0	0	3	6	6
New Jersey	0	8	7	15	32	19	0	0	0	1	1	2
Pennsylvania	12	9	9	37	45	45	0	0	0	3	2	6
EAST NORTH CENTRAL												
Ohio	13	13	8	47	55	54	0	0	0	4	5	5
Indiana	2	5	4	17	5	10	0	1	0	2	4	3
Illinois	11	42	12	26	33	37	0	0	0	2	3	3
Michigan <sup>2</sup>	3	7	7	48	46	46	0	0	1	0	0	1
Wisconsin	2	4	1	20	22	37	0	0	0	1	0	0
WEST NORTH CENTRAL												
Minnesota	5	97	0	16	10	23	0	0	0	0	0	0
Iowa	5	13	1	5	3	8	0	1	0	2	0	0
Missouri	4	34	4	3	5	10	0	0	0	1	0	5
North Dakota	0	3	1	2	1	2	0	0	0	0	0	0
South Dakota	0	11	0	1	3	3	0	0	0	0	0	0
Nebraska	1	20	1	4	4	4	0	0	0	1	0	0
Kansas	3	35	7	10	16	13	0	0	0	1	1	1
SOUTH ATLANTIC												
Delaware	0	0	0	1	0	1	0	0	0	1	1	0
Maryland <sup>2</sup>	3	3	3	11	5	19	0	0	0	0	0	2
District of Columbia	0	0	0	3	1	3	0	0	0	0	0	0
Virginia	3	4	4	7	23	16	0	0	0	4	11	5
West Virginia	1	4	2	5	29	21	0	0	0	2	4	5
North Carolina	3	3	3	11	10	10	0	0	0	2	3	3
South Carolina	2	0	3	0	2	2	0	0	0	5	5	5
Georgia	2	3	4	3	3	7	0	0	0	4	1	14
Florida	2	24	2	4	5	2	0	0	0	2	1	1
EAST SOUTH CENTRAL												
Kentucky	0	7	7	8	2	8	0	0	0	7	2	9
Tennessee	6	0	1	8	6	14	0	0	0	6	3	6
Alabama	1	33	3	1	16	8	0	0	0	1	3	8
Mississippi <sup>2</sup>	0	19	5	2	0	3	0	0	0	6	2	4
WEST SOUTH CENTRAL												
Arkansas	3	15	6	1	3	4	0	0	0	0	12	9
Louisiana	1	27	5	3	10	3	0	0	0	4	13	13
Oklahoma	0	6	6	2	3	6	0	0	0	5	1	4
Texas	9	61	61	16	24	24	0	0	0	10	13	21
MOUNTAIN												
Montana	0	2	0	2	2	2	0	0	0	0	0	1
Idaho	10	1	0	3	2	4	0	0	0	3	2	0
Wyoming	0	8	0	0	3	2	0	0	0	0	0	0
Colorado	1	43	2	11	14	11	0	0	0	0	0	1
New Mexico	0	11	1	0	5	5	0	0	0	1	1	2
Arizona	0	9	0	3	3	3	0	0	0	0	2	1
Utah <sup>2</sup>	0	0	0	5	11	11	0	0	0	0	0	0
Nevada	0	0	0	0	0	0	0	0	0	0	0	0
PACIFIC												
Washington	0	2	1	5	18	18	0	0	0	0	0	0
Oregon	4	1	3	7	19	6	0	0	0	1	0	0
California	24	38	25	64	70	87	0	0	0	1	3	3
Total	157	666	369	555	686	807	0	2	1	93	109	183
29 weeks	1,575	3,256	2,048	60,731	84,478	94,785	141	266	283	1,697	1,930	2,424
Seasonal low week <sup>4</sup>	(11th) Mar. 15-21			(32nd) Aug. 9-15			(35th) Aug. 30-Sept. 5			(11th) Mar. 15-21		
Total since low	964	2,789	1,653	87,417	123,049	133,106	195	342	400	1,212	1,455	1,768

<sup>2</sup> Period ended earlier than Saturday.

<sup>3</sup> Dates between which the approximate low week ends. The specific date will vary from year to year.

<sup>4</sup> Including paratyphoid fever reported separately, as follows: Massachusetts 4 (salmonella infection); Ohio 2; Iowa 2; Virginia 1; Georgia 1; Louisiana 1; Texas 1; California 1.

<sup>5</sup> Corrections: Poliomyelitis, Nebraska, weeks ended June 21 and June 28, 1 case (instead of 3), and 2 cases (instead of 3), respectively.

Telegraphic morbidity reports from State health officers for the week ended July 19, 1947, and comparison with corresponding week of 1946 and 5-year median—Con.

Division and State	Whooping cough			Week ended July 19, 1947								
	Week ended—		Median, 1942-46	Dysentery			Encephalitis, infectious	Rocky Mt. spotted fever	Tularemia	Typhus fever, endemic	Undulant fever	
	July 19, 1947	July 20, 1946		Amebic	Bacillary	Un- specified						
NEW ENGLAND												
Maine.....	14	1	22									
New Hampshire.....	1	2	2									
Vermont.....	6	29	19								5	
Massachusetts.....	140	156	141						1			
Rhode Island.....	17	9	9									
Connecticut.....	24	36	36								1	
MIDDLE ATLANTIC												
New York.....	230	121	269	10	2		3				7	
New Jersey.....	193	148	184					1				
Pennsylvania.....	215	104	196					1				
EAST NORTH CENTRAL												
Ohio.....	353	96	183					1				
Indiana.....	85	21	29		1			3				
Illinois.....	121	145	145	4	1		4				13	
Michigan.....	217	214	170	1	2						4	
Wisconsin.....	167	180	180						1		16	
WEST NORTH CENTRAL												
Minnesota.....	78	11	39								14	
Iowa.....	32	21	21								37	
Missouri.....	59	11	38								20	
North Dakota.....	4		4									
South Dakota.....	1	1	1								1	
Nebraska.....	15	2	8								4	
Kansas.....	48	31	47						1		3	
SOUTH ATLANTIC												
Delaware.....	5	6	1									
Maryland.....	103	14	83				1	8				
District of Columbia.....	15	4	10									
Virginia.....	62	79	79			71		5			2	
West Virginia.....	13	17	32									
North Carolina.....	112	118	199	1				3			1	
South Carolina.....	139	35	82	1	15					2	1	
Georgia.....	32	7	22		1				2	14	10	
Florida.....	28	41	20			1				3	4	
EAST SOUTH CENTRAL												
Kentucky.....	22	71	71		1			2				
Tennessee.....	53	17	33			2			1			
Alabama.....	69	26	29						1	11	7	
Mississippi.....	4			3	4				4	1	2	
WEST SOUTH CENTRAL												
Arkansas.....	39	1	22	16		2			11	1	1	
Louisiana.....	7	8	7	1					5	3	2	
Oklahoma.....	34	11	11	3					2		3	
Texas.....	538	221	221	30	297	47				10	10	
MOUNTAIN												
Montana.....	11	3	9						2			
Idaho.....	11	21	6									
Wyoming.....	1	3	3					1				
Colorado.....	55	15	15		1						11	
New Mexico.....	13	33	7									
Arizona.....	26	5	15			1						
Utah.....	5	16	37						1		2	
Nevada.....												
PACIFIC												
Washington.....	40	36	36									
Oregon.....	13	25	19	1		1						
California.....	167	73	146	3	1		3				2	
Total.....	3,637	2,245	2,924	74	327	125	11	25	32	44	183	
Same week, 1946.....	2,245			63	467	198	44	40	15	134	140	
Median, 1942-46.....	2,924			63	615	333	13	33	16	141	132	
29 weeks: 1947.....	88,437			1,641	9,040	5,750	201	244	862	1,083	3,298	
1946.....	55,284			1,283	10,369	3,722	304	260	546	1,669	2,777	
Median, 1942-46.....	72,290			1,045	10,369	3,722	304	260	534	1,669	2,753	

\* Period ended earlier than Saturday.

† 2-year average, 1945-46.

Anthrax: New York 1 case; Pennsylvania 1 case.

Colorado tick fever: Wyoming 1 case.

Alaska, week ended July 19: Measles 3; influenza 13; pneumonia 1.

Territory of Hawaii, week ended July 19: Influenza 2; poliomyelitis 2; endemic typhus 1; undulant fever 1; whooping cough 27.

Glanders: West Virginia 8 cases.

Leprosy: Arkansas 1 case; California 1 case.

WEEKLY REPORTS FROM CITIES <sup>1</sup>

City reports for week ended July 12, 1947

This table lists the reports from 89 cities of more than 10,000 population distributed throughout the United States, and represents a cross section of the current urban incidence of the diseases included in the table.

Division, State, and City	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Pollomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
NEW ENGLAND												
Maine:												
Portland	0	0		0	1	0	1	0	1	0	1	
New Hampshire:												
Concord	0	0		0		0	2	0	0	0	0	
Vermont:												
Barre	0	0		0	1	0	0	0	0	0	0	
Massachusetts:												
Boston	6	0		0	16	0	6	0	6	0	0	19
Fall River	0	0		0	8	0	0	0	1	0	0	23
Springfield	0	1		0	7	0	1	0	0	0	0	2
Worcester	0	0		0	9	0	10	0	0	0	0	8
Rhode Island:												
Providence	0	0		0	19	0	1	0	0	0	1	8
Connecticut:												
Bridgeport	0	0	1	0	7	0	0	0	1	0	0	
Hartford	0	0		0	34	0	0	0	0	0	0	
New Haven	0	0		0	19	1	0	0	0	0	0	21
MIDDLE ATLANTIC												
New York:												
Buffalo	1	0		0	0	0	4	0	0	0	0	6
New York	11	1	2	0	306	2	48	1	24	0	3	84
Rochester	0	0		0	1	1	3	1	1	0	0	4
Syracuse	0	0		0		1	1	0	6	0	0	31
New Jersey:												
Camden	1	0		0	2	0	4	0	0	1	0	1
Newark	0	0		0	16	2	4	0	5	0	0	34
Trenton	0	0		0		0	1	0	1	0	0	3
Pennsylvania:												
Philadelphia	2	0	1	0	13	0	11	1	14	0	0	70
Pittsburgh	0	0		0	4	0	4	0	1	0	1	32
Reading	0	0		0	3	0	0	0	0	0	0	1
EAST NORTH CENTRAL												
Ohio:												
Cincinnati	0	0		1		0	3	0	2	0	0	14
Cleveland	1	0	1	1	25	0	4	1	9	0	0	146
Columbus	0	0		0	44	0	1	1	2	0	0	22
Indiana:												
Fort Wayne	0	0		0		0	0	0	0	0	0	3
Indianapolis	0	0		0	2	1	4	1	2	0	0	13
South Bend	0	0		0		0	0	0	0	0	0	1
Terre Haute	0	0		0	1	0	0	0	0	0	0	3
Illinois:												
Chicago	1	0		0	53	3	13	4	10	0	1	45
Michigan:												
Detroit	0	1		0	10	0	4	0	19	0	0	50
Flint	0	0		0	1	0	4	0	0	0	0	
Grand Rapids	0	0		0	23	0	2	0	4	0	0	11
Wisconsin:												
Kenosha	0	0		0	6	0	0	0	0	0	0	1
Milwaukee	0	0		0	15	1	1	0	2	0	0	25
Racine	0	0		0	3	0	0	0	7	0	0	4
Superior	0	0		0	5	0	0	0	0	0	0	1
WEST NORTH CENTRAL												
Minnesota:												
Duluth	1	0		0		0	0	1	1	0	0	19
Minneapolis	1	0		0	11	0	3	0	2	0	0	5
St. Paul	0	0		0	95	0	5	0	1	0	0	23
Missouri:												
Kansas City	0	0		0		0	6	0	4	0	0	9
St. Joseph	0	0		0	1	0	0	0	0	0	0	4
St. Louis	0	0		0	26	2	6	2	1	0	0	30

<sup>1</sup> In some instances the figures include nonresident cases.

## City reports for week ended July 12, 1947—Continued

Division, State, and City	Diphtheria cases	Enecephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Polioviruses cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
WEST NORTH CENTRAL—continued												
North Dakota:												
Fargo.....	0	0		0	2	0	0	0	0	0	0	
Nebraska:												
Omaha.....	1	0		0	7	0	2	0	0	0	0	4
Kansas:												
Topeka.....	0	0		0	2	0	0	0	0	0	0	2
Wichita.....	0	0		0	1	0	3	0	0	0	0	6
SOUTH ATLANTIC												
Delaware:												
Wilmington.....	0	0		0	1	0	0	0	0	0	1	1
Maryland:												
Baltimore.....	1	0		0	6	0	6	0	1	0	0	79
Frederick.....	0	0		0		0	0	0	0	0	0	
District of Columbia:												
Washington.....	0	0	1	0	7	0	4	0	3	0	0	28
Virginia:												
Lynchburg.....	0	0		0		0	0	1	1	0	0	
Richmond.....	0	0		0	14	0	1	0	0	0	0	3
Roanoke.....	0	0		0	1	0	0	0	0	0	0	
West Virginia:												
Charleston.....	0	0		0	8	0	0	0	0	0	0	
Wheeling.....	0	0		0	1	0	1	0	0	0	0	1
North Carolina:												
Raleigh.....	0	0		0		0	2	0	0	0	0	5
Wilmington.....	0	0		0	2	0	0	0	0	0	0	
Winston-Salem.....	0	0		0	1	0	1	0	1	0	1	3
South Carolina:												
Charleston.....	0	0	5	0	1	0	0	0	0	0	1	13
Georgia:												
Atlanta.....	0	0		0	0	0	3	0	0	0	0	
Brunswick.....	0	0		0	1	0	0	0	0	0	0	
Savannah.....	0	0		0	2	0	0	0	0	0	0	6
Florida:												
Tampa.....	2	0		0	1	0	3	0	1	0	1	3
EAST SOUTH CENTRAL												
Tennessee:												
Memphis.....	1	0		1	3	0	8	2	0	0	0	4
Nashville.....	0	0		0	0	0	1	0	0	0	0	3
Alabama:												
Birmingham.....	0	0	2	0	2	0	2	0	0	0	1	
Mobile.....	0	0		0	5	0	0	0	0	0	0	4
WEST SOUTH CENTRAL												
Arkansas:												
Little Rock.....	0	0		0		0	0	0	0	0	0	3
Louisiana:												
New Orleans.....	0	0	1	0	2	0	6	0	0	0	0	0
Shreveport.....	0	0		0		0	2	1	0	0	0	
Oklahoma:												
Oklahoma City.....	0	1		0	1	0	3	1	0	0	0	11
Texas:												
Dallas.....	0	0		0	6	0	1	0	1	0	0	29
Galveston.....	0	0		0		0	3	0	0	0	0	
Houston.....	1	0		0	1	0	2	1	0	0	1	2
San Antonio.....	2	0		0		0	2	1	0	0	0	7
MOUNTAIN												
Montana:												
Billings.....	0	0		0		0	1	0	0	0	0	
Great Falls.....	0	0		0	2	0	1	0	3	0	0	2
Helena.....	0	0		0		0	0	0	0	0	0	3
Missoula.....	0	0		0		0	0	0	0	0	0	
Idaho:												
Boise.....	0	0		0		0	2	6	0	0	0	
Colorado:												
Denver.....	4	0		0	2	0	5	0	9	0	0	27
Pueblo.....	0	0		0	1	0	1	0	0	0	0	9
Utah:												
Salt Lake City.....	1	0		0	3	0	5	0	1	0	0	10

## City reports for week ended July 12, 1947—Continued

Division, State, and City	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Pollomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
PACIFIC												
Washington:												
Seattle.....	1	0	-----	0	1	0	3	1	6	0	0	12
Spokane.....	0	0	-----	0	-----	0	1	0	0	0	0	1
Tacoma.....	0	0	-----	0	1	0	0	0	0	0	0	3
California:												
Los Angeles.....	1	0	3	1	5	0	1	7	8	0	6	32
Sacramento.....	1	0	-----	0	-----	0	0	0	1	0	0	4
San Francisco.....	0	0	-----	0	18	1	3	1	3	0	0	4
Total.....	41	4	17	4	898	15	236	35	166	0	19	1,114
Corresponding week, 1946*.....	45	-----	13	6	1,451	-----	218	-----	202	0	15	610
Average, 1942-46*.....	43	-----	21	16	1,120	-----	224	-----	290	0	22	934

\*Exclusive of Oklahoma City.

‡3-year average, 1944-46.

§5-year median, 1942-46.

*Dysentery, amebic.*—Cases: New York 4.*Dysentery, bacillary.*—Cases: Worcester 3; New Haven 1; Philadelphia 15; Detroit 2; Charleston, S. C., 9; Los Angeles 1.*Dysentery, unspecified.*—Cases: Portland 2; Cincinnati 30; Fargo 1; San Antonio 12; Los Angeles 2.*Rocky Mountain spotted fever.*—Cases: Philadelphia 1; Washington, D. C., 1; Missoula 1.*Typhemia.*—Cases: Charleston, S. C. 1.*Typhus fever, endemic.*—Cases: Mobile 1; New Orleans 2; Shreveport 1; Los Angeles 1.

Rates (annual basis) per 100,000 population, by geographic groups, for the 89 cities in the preceding table (latest available estimated population, 34,522,600)

	Diphtheria case rates	Encephalitis, infectious, case rates	Influenza		Measles case rates	Meningitis, meningococcus, case rates	Pneumonia death rates	Pollomyelitis case rates	Scarlet fever case rates	Smallpox case rates	Typhoid and paratyphoid fever case rates	Whooping cough case rates
			Case rates	Death rates								
New England.....	15.7	2.6	2.6	0.0	316	2.6	54.9	0.0	24	0.0	5.2	220
Middle Atlantic.....	6.9	0.5	1.4	0.0	160	2.8	37.0	1.4	24	0.0	1.9	124
East North Central.....	1.2	0.6	0.6	1.2	115	3.1	22.1	4.3	35	0.0	0.6	213
West North Central.....	6.0	0.0	0.0	0.0	288	4.0	49.7	6.0	18	0.0	0.0	203
South Atlantic.....	5.0	0.0	9.9	0.0	76	0.0	34.7	1.7	12	0.0	6.6	235
East South Central.....	5.9	0.0	11.8	5.9	59	0.0	64.9	11.8	0	0.0	5.9	65
West South Central.....	7.6	2.5	2.5	0.0	25	0.0	48.3	10.2	3	0.0	2.5	132
Mountain.....	39.7	0.0	0.0	0.0	64	0.0	119.1	47.7	103	0.0	0.0	405
Pacific.....	4.7	0.0	4.7	1.6	40	1.6	12.7	14.2	28	0.0	9.5	89
<b>Total.....</b>	<b>6.2</b>	<b>0.6</b>	<b>2.6</b>	<b>0.6</b>	<b>136</b>	<b>2.3</b>	<b>35.7</b>	<b>8.3</b>	<b>25</b>	<b>0.0</b>	<b>2.9</b>	<b>169</b>

## PLAGUE INFECTION IN MODOC AND PLACER COUNTIES, CALIF.

Plague infection has been reported proved, on July 8, in specimens collected in Modoc and Placer Counties, Calif., as follows:

*Modoc County.*—In tissue from 1 ground squirrel, *Citellus oregonus*, taken 5 miles north and 8 miles east of Alturas.

*Placer County.*—In a pool of 15 fleas from 6 chipmunks, *Eutamias* sp., taken 1 mile north of King's Beach, and a pool of 18 fleas from 16 chipmunks, *Eutamias* sp., taken from the Brockway-Truckee Road, 2 miles north of King's Beach.

## TERRITORIES AND POSSESSIONS

## Puerto Rico

*Notifiable diseases—4 weeks ended June 28, 1947.*—During the 4 weeks ended June 28, 1947, cases of certain notifiable diseases were reported in Puerto Rico as follows:

Disease	Cases	Disease	Cases
Chickenpox.....	53	Syphilis.....	139
Diphtheria.....	50	Tetanus.....	12
Dysentery, unspecified.....	7	Tetanus, infantile.....	1
Gonorrhea.....	127	Tuberculosis (all forms).....	829
Influenza.....	118	Typhoid and paratyphoid fever.....	21
Malaria.....	183	Typhus fever (murine).....	8
Measles.....	14	Whooping cough.....	71
Poliomyelitis.....	1		



## FOREIGN REPORTS

### CANADA

*Provinces—Communicable diseases—Week ended June 28, 1947.*—During the week ended June 28, 1947, cases of certain communicable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brun- swick	Que- bec	On- tario	Mani- toba	Sas- katch- ewan	Alber- ta	British Colum- bia	Total
Chickenpox.....		21	1	114	221	51	37	60	96	601
Diphtheria.....		1	1	20	2	2	1	3		29
Dysentery, amebic.....					1					1
German measles.....				8	25		17	5	10	65
Influenza.....		6			1		3			10
Measles.....		14	1	42	160	111	70	45	48	491
Meningitis, meningococ- cus.....		3		2	2		1			8
Mumps.....		22		8	243	10	24	25	54	386
Poliomyelitis.....					1			1	7	9
Scarlet fever.....		3	6	50	46	8	5	10	4	132
Tuberculosis (all forms).....		3	13	122	33	26	12	5	37	251
Typhoid and paraty- phoid fever.....			1	6	4	1			3	15
Undulant fever.....				3	3				1	7
Veneral diseases:										
Gonorrhea.....	7	14	9	88	81	43	32	27	( <sup>1</sup> )	301
Syphilis.....		5	6	52	60	15	13	2	( <sup>1</sup> )	153
Whooping cough.....				67	96	10		18	34	225

<sup>1</sup> Report from British Columbia for the period not received.

### REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER RECEIVED DURING THE CURRENT WEEK

NOTE.—Except in cases of unusual incidence, only those places are included which had not previously reported any of the above-mentioned diseases, except yellow fever, during recent months. All reports of yellow fever are published currently.

A table showing the accumulated figures for these diseases for the year to date is published in the PUBLIC HEALTH REPORTS for the last Friday in each month.

#### Plague

*Ecuador—Loja Province—Loja Canton—Trapichillo.*—For the week ended June 7, 1947, 3 cases of plague were reported in Trapichillo, Loja Canton, Loja Province, Ecuador.

*Germany (Russian Zone)—East Prussia—Konigsberg.*—An outbreak of bubonic plague is reported to have occurred in June 1947, in Konigsberg, East Prussia, Germany (Russian Zone). The civilian mortality is stated to be extremely serious.



**Smallpox**

*Ecuador.*—For the month of June 1947, 61 cases of smallpox with 1 death were reported in Ecuador, including 22 cases reported in Azuay Province, and 25 cases reported in Guayaquil.

*Great Britain—England.*—For the week ended July 12, 1947, 3 cases of smallpox were reported in England, including 2 cases in Barnsley, and 1 case in Willenhall.

x

## FEDERAL SECURITY AGENCY

### UNITED STATES PUBLIC HEALTH SERVICE

THOMAS PARRAN, *Surgeon General*

#### DIVISION OF PUBLIC HEALTH METHODS

G. ST. J. PERROTT, *Chief of Division*

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It contains (1) current information regarding the incidence and geographic distribution of communicable diseases in the United States, insofar as data are obtainable, and of cholera, plague, smallpox, typhus fever, yellow fever, and other important communicable diseases throughout the world; (2) articles relating to the cause, prevention, and control of disease; (3) other pertinent information regarding sanitation and the conservation of the public health.

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